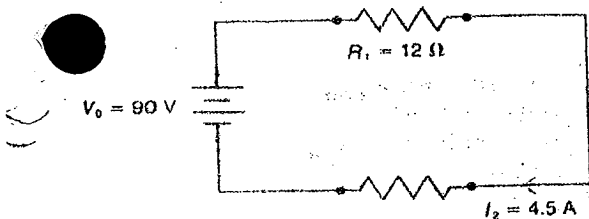
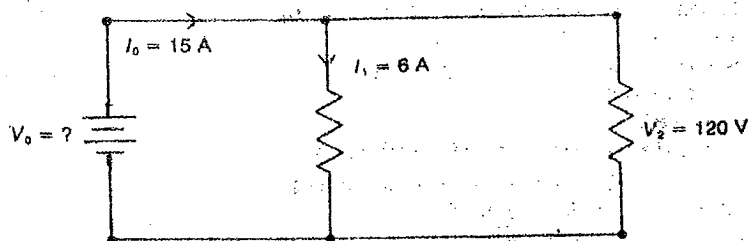


In this circuit, find V_1 , V_2 , I_0 , I_1 , and R_2 .



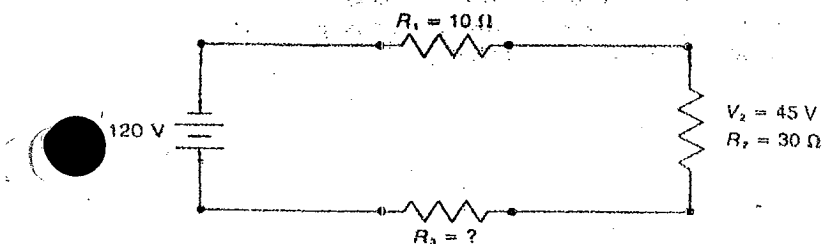
(54 V, 36 V, 4.5 A, 4.5 A, 8.0 \Omega)

In this circuit, find V_0 , V_1 , I_2 , R_1 , and R_2 .



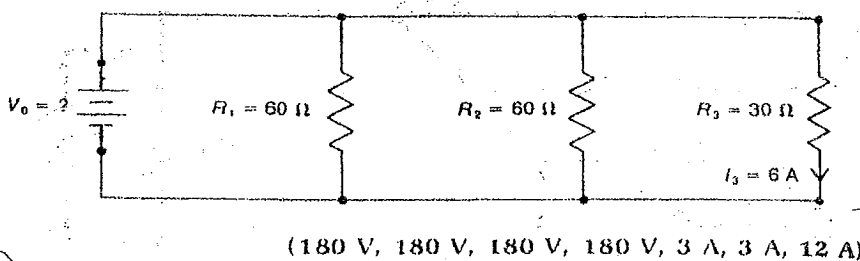
(120 V, 120 V, 9 A, 20 \Omega, 13.3 \Omega)

3. In this circuit, find V_1 , V_2 , I_1 , I_2 , I_3 , and R_3 .



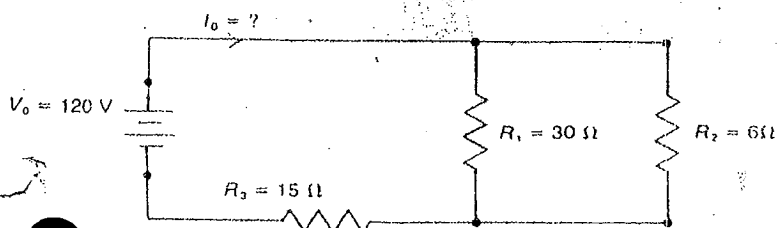
(15 V, 60 V, 1.5 A, 1.5 A, 1.5 A, 40 \Omega)

4. In this circuit, find V_0 , V_1 , V_2 , V_3 , I_0 , I_1 , and I_2 .



(180 V, 180 V, 180 V, 180 V, 3 A, 3 A, 12 A)

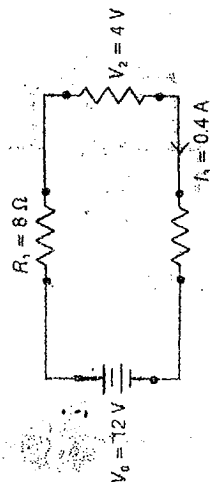
5. In this circuit, find V_1 , V_2 , V_3 , I_0 , I_1 , I_2 , and I_3 .



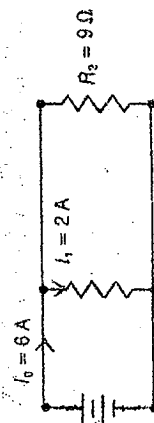
(30 V, 30 V, 90 V, 6 A, 1 A, 5 A, 6 A)

20. Examine these circuits and find the values indicated.

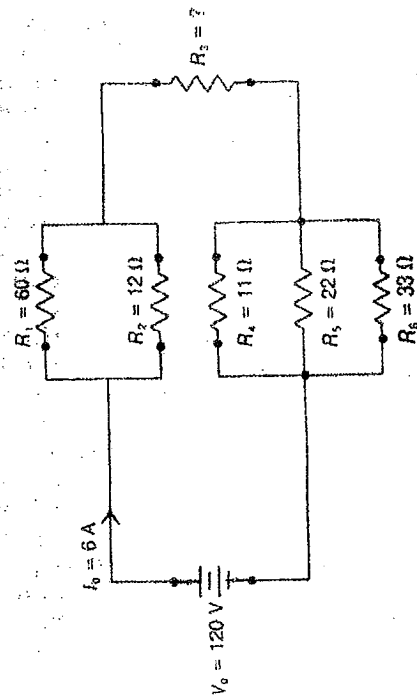
(a) Find: R_2 , R_3 , and V_3 (10 \Omega, 12 \Omega, 4.8 V)



(b) Find: V_0 , R_1 , R_{total} (36 V, 18 \Omega, 6 \Omega)

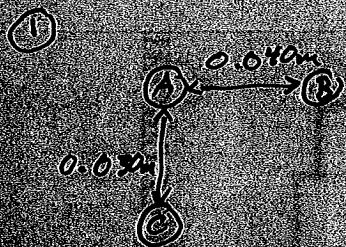


(c) Find: R_3 , I_1 , I_2 , I_3 , I_4 , I_5 , I_6 (4 \Omega, 1 A, 5 A, 3.3 A, 1.5 A, 1.1 A)



- 13 → 240V
 14 a) 160 Ω
 b) 20 Ω
 c) 15 V
 15 a) 20 Ω
 b) 10 Ω
 16 a) 90 Ω
 b) 12 Ω
 c) 2.5 Ω
 17 8
 18 1.0 Ω
 19 16 Ω

13. What is the potential difference across a motor with a resistance of 40 Ω if the motor draws a current of 6.0 A?
 14. A string of eight Christmas tree lights connected in series to a 120 V source draws a current of 0.75 A. Find
 (a) the total resistance of the string of lights
 (b) the resistance of each light
 (c) the potential difference across each light
 15. (a) What is the resistance of a toaster that draws a current of 6.0 A from a 120 V source?
 (b) What resistance would have to be added in series with the same toaster to reduce its current to 4.0 A?
 16 Calculate the total resistance in each of these cases.
 (a) 10 Ω, 30 Ω, and 50 Ω in series
 (b) 6 Ω, 5 Ω, and 30 Ω in parallel
 (c) 9 Ω in series, with a parallel branch of 4 Ω and 12 Ω
 17. How many 160 Ω resistors must be connected in parallel to draw a current of 6.0 A from a 120 V source?
 18. The potential difference across a heating coil is 6.0 V when the current passing through it is 3.0 A. What resistance must be added in series with the coil to reduce the current flowing through it to 2.0 A?
 19. A portable radio is designed to operate at a potential difference of 6.0 V and a current of 250 mA, but the only source available has a potential of 10.0 V. What resistance must be added in series with the radio to make it operate properly?



$q_A = 5.0 \times 10^{-6} \text{ C}$
 $q_B = 2.0 \times 10^{-6} \text{ C}$
 $q_C = 2.0 \times 10^{-6} \text{ C}$

what is the ~~force~~
net force on A?

- ② If 300 mA flows through a circuit in 25 s, how much charge is transferred?
 ③ How much work is done by a 1.5 V cell that moves 5.4×10^{18} electrons?
 ④ Suppose 500,000 households leave a 60 W bulb on for 5.0 min. How much would this cost if the price is 6.0 ¢/kWh?

- ① $1.3 \times 10^{10} \text{ E}^2 \text{ up?}$
 ② 75 C
 ③ 1.5 J
 ④ 4150